

What is claimed is:

1. A method for oxidizing an organic compound comprising contacting the organic compound with a composition comprising a water soluble peroxygen compound and a pH modifier.
2. A method as in claim 1, wherein the organic compound is present in soil, groundwater, process water or wastewater.
3. A method as in claim 1, wherein the organic compound is selected from the group consisting of volatile organic compounds, semi-volatile organic compounds, polyaromatic hydrocarbons, polychlorobiphenyls, pesticides and herbicides.
4. The method as in claim 1, wherein the peroxygen compound is a dipersulfate.
5. The method as in claim 4, wherein the dipersulfate is selected from sodium, potassium or ammonium persulfate or a combination thereof.
6. The method as in claim 1, wherein the peroxygen compound is a monopersulfate.
7. The method as in claim 6, wherein the monopersulfate is selected from sodium and potassium monopersulfate.
8. The method as in claim 1, wherein the peroxygen compound is a combination of a dipersulfate and a monopersulfate.
9. The method as in claim 1 wherein the pH modifier is sodium carbonate.
10. The method as in claim 9 wherein carbonate and persulfate are added in combination so that the mole ratio of carbonate ion to persulfate ion is greater than 0.01 but less than 1.0.

11. The method as in claim 10 wherein the carbonate and persulfate are added in combination so that the mole ratio of carbonate ion to persulfate ion is greater than 0.10 but less than 0.30.
12. The method as in claim 1 wherein the pH modifier is sodium bicarbonate.
13. The method as in claim 1, wherein the composition is introduced into soil in sufficient quantities and under conditions to oxidize substantially all the volatile organic compounds in the soil.
14. The method as in claim 13, wherein the composition is introduced into the soil either *in situ* or *ex situ*.
15. The method as in claim 14, wherein the soil is heated to a temperature up to 99 degrees C.
16. A method for oxidizing organic compounds comprising contacting the compounds with a composition comprising a water soluble peroxygen compound, a pH modifier, and a catalyst.
17. A method as in claim 16, wherein the organic compound is selected from the group consisting of volatile organic compounds, semi-volatile organic compounds, polyaromatic hydrocarbons, polychlorobiphenyls, pesticides and herbicides.
18. The method as in claim 16, wherein the peroxygen compound is a dipersulfate.
19. The method as in claim 18, wherein the dipersulfate is selected from sodium, potassium or ammonium persulfate or a combination thereof.
20. The method as in claim 16, wherein the peroxygen compound is a monopersulfate.

21. The method as in claim 20, wherein the monopersulfate is selected from sodium and potassium monopersulfate.
22. The method as in claim 16, wherein the peroxygen compound is a combination of a dipersulfate and a monopersulfate.
23. The method as in claim 16 wherein the pH modifier is sodium carbonate.
24. The method as in claim 23 wherein carbonate and persulfate are added in combination so that the mole ratio of carbonate ion to persulfate ion is greater than 0.01 but less than 1.0.
25. The method as in claim 24 wherein the carbonate and persulfate are added in combination so that the mole ratio of carbonate ion to persulfate ion is greater than 0.10 but less than 0.30.
26. The method as in claim 16 wherein the pH modifier is sodium bicarbonate.
27. The method as in claim 16 wherein the catalyst consists of a divalent or trivalent transition metal.
28. The method as in claim 16 wherein the catalyst consists of a divalent or trivalent transition metal in combination with a chelating agent.
29. The method as in claim 16, wherein the composition is introduced into soil in sufficient quantities and under conditions to oxidize substantially all the volatile organic compounds in the soil.
30. The method as in claim 28, wherein the composition is introduced into the soil either *in situ* or *ex situ*.
31. The method as in claim 29, wherein the soil is heated to a temperature up to 99 degrees C.